

Electro Chemicals Division
Diamond Shamrock Corporation
1100 Superior Avenue
Cleveland, Ohio 44114
216/694-5000

Material Safety

GENERAL INFORMATION

Diamond Shamrock

Data Sheet

CAUSTIC SODA - Liquid

Slightly Reactive

1

Nonflammable

0

Highly Hazardous

3

214 922-2700

I PRODUCT IDENTIFICATION

MANUFACTURER'S NAME

DIAMOND SHAMROCK CORPORATION

REGULAR TELEPHONE NO.

216-352-9311

EMERGENCY TELEPHONE NO.

216-375-7070

ADDRESS

1100 Superior Avenue, Cleveland, Ohio 44114

TRADE NAME

CAUSTIC SODA - Liquid

SYNONYMS

SODIUM HYDROXIDE NaOH

II HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT

SODIUM HYDROXIDE

%

50

HAZARD DATA

TLV = 2.0 mg/m³ for 15 minutes

III PHYSICAL DATA

BOILING POINT, 760 MM HG

143°C

MELTING POINT

FREEZING POINT

12.1°C

SPECIFIC GRAVITY (H₂O=1)

1.54 @ 15.6°C

VAPOR PRESSURE

13 mm Hg @ 60°C

VAPOR DENSITY (AIR=1)

Not applicable

SOLUBILITY IN H₂O, % BY WT

Completely soluble

% VOLATILES BY VOL

Not volatile

EVAPORATION RATE (BUTYL ACETATE=1)

Does not apply

APPEARANCE AND ODOR

Clear - no odor

pH

7.5% solution
has pH 14

All information recommendations and suggestions appearing herein concerning our product are based upon tests and data believed to be reliable, however, it is the user's responsibility to determine the safety, toxicity, and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Diamond Shamrock Corporation as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Diamond Shamrock Corporation assume any liability arising out of use by others, of the product referred to herein. Nor is the information herein to be construed as absolutely complete. The information herein is for informational purposes only and does not constitute a contract. The information herein is for informational purposes only and does not constitute a contract. The information herein is for informational purposes only and does not constitute a contract.

Data Sheet

IV FIRE AND EXPLOSION DATA		
FLASH POINT (TEST METHOD)		AUTOIGNITION TEMPERATURE
None		Nonflammable
FLAMMABLE LIMITS IN AIR, % BY VOL.	LOWER	UPPER
	Nonflammable	Nonflammable
EXTINGUISHING MEDIA		
Caustic soda is nonflammable		
SPECIAL FIRE FIGHTING PROCEDURES		
Caustic soda is nonflammable		
UNUSUAL FIRE AND EXPLOSION HAZARD		
Caustic soda is nonflammable		
V HEALTH HAZARD INFORMATION		
HEALTH HAZARD DATA	Caustic soda is a corrosive liquid. TLV = 2.0 mg/m ³ for 15 minutes.	
ROUTES OF EXPOSURE		
INHALATION	Concentrated mist or spray of caustic soda may cause damage to the upper respiratory tract and even to the lung tissue proper which could produce chemical pneumonia, depending upon severity of exposure	
SKIN CONTACT	Caustic soda is destructive to tissues contacted and produces severe burns.	
SKIN ABSORPTION	See "Skin Contact" above.	
EYE CONTACT	Caustic soda is destructive to eye tissues on contact. Will cause severe burns that result in damage to the eyes and even blindness.	
INGESTION	Caustic soda can cause severe burns and complete tissue perforation of mucous membranes of the mouth, throat, esophagus, and stomach if swallowed.	
EFFECTS OF OVEREXPOSURE		
ACUTE OVEREXPOSURE	Burns; frequently deep ulceration and ultimate scarring.	
CHRONIC OVEREXPOSURE	The chronic local effect may consist of multiple areas of superficial destruction of the skin or of primary irritant dermatitis. Similarly, inhalation of spray or mist may result in varying degrees of irritation or damage to the respiratory tract tissues.	
EMERGENCY AND FIRST AID PROCEDURES		
EYES.	Flush eyes with large quantity of water for at least 15 minutes even if minute quantities of caustic soda enter the eyes. See Medical Attention immediately.	
SKIN	Wash skin with large quantity of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse and discard contaminated shoes. Speed in removing caustic soda is of primary importance. Seek Medical Attention immediately.	
INHALATION.	If discomfort is experienced from exposure to caustic soda mist or spray, the person should employ respiratory protection or leave the contaminated area until proper ventilation is restored and report for medical evaluation.	
INGESTION	If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. If available, give at least one ounce of vinegar in an equal amount of water. Never give anything by mouth to an unconscious person. Seek Medical Attention immediately.	
NOTES TO PHYSICIAN		

Data Sheet

VI REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY

Stable

INCOMPATIBILITY When handling liquid caustic soda, avoid contact with aluminum, leather, wool, tin, zinc, and alloys containing these metals. Do not mix with strong acids without dilution and agitation.

HAZARDOUS DECOMPOSITION PRODUCTS

None

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION

None

VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Contain if possible. Then neutralize with dilute acid. Flush area with water followed by liberal covering of sodium bicarbonate for removing last traces of caustic soda.

NEUTRALIZING CHEMICALS

Any inorganic acid, such as hydrochloric, sulfuric, nitric, phosphoric, and acetic.

WASTE DISPOSAL METHOD

Be sure all federal, state, and local regulations regarding health and pollution are followed.

VIII INDUSTRIAL HYGIENE CONTROL MEASURES

VENTILATION REQUIREMENTS

Work areas should be isolated and contained, and provided with adequate local exhaust ventilation to maintain the air concentration of caustic soda below 2.0 mg/m³.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY (SPECIFY IN DETAIL)

NIOSH-approved respirator for dust and mist.

EYE

Chemical splash goggles and face shield should be worn when working with or around caustic soda.

GLOVES

Gloves coated with rubber, synthetic elastomers, PVC, or other plastic should be worn when handling caustic soda.

OTHER CLOTHING AND EQUIPMENT

Hard hats, safety shoes, and rubber boots should be worn along with rubber apron when handling caustic soda. Eye bath and safety shower should be provided in all areas in which caustic soda is handled.

Data Sheet

IX SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS

D A N G E R !
Causes Severe Burns to Skin and Eyes

- Do not get in eyes, on skin, or on clothing.
- Avoid breathing dust or mist.
- Do not take internally.
- When handling, wear goggles and face shield, rubber gloves and apron, and protective clothing.
- If exposure to mist or dust may occur, wear appropriate respiratory protection.
- When making solutions, always add slowly to liquid surface with constant stirring. Never add the liquid to the caustic soda.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes and call a physician. Remove contaminated clothing and shoes and wash before reuse.

If caustic soda is ingested, do not induce vomiting. If patient is conscious, give several glasses of milk or water. Call a physician.

The final objective in case of overexposure is to get patient rapidly to hospital emergency room.

OTHER HANDLING AND STORAGE REQUIREMENTS

Considerable heat is generated when water is added to caustic soda; therefore, when making solutions, ALWAYS add the caustic soda to the water with constant stirring. If caustic soda becomes concentrated in one area, or if added too rapidly, or if added to hot liquid, a rapid temperature increase will result in DANGEROUS BOILING and/or spattering which may cause an immediate VIOLENT ERUPTION. Caustic soda can react violently or explosively with acids and many organic chemicals.

Liquid caustic soda is normally stored above the freezing point (15°C).

Returnable containers should be shipped in accordance with supplier's recommendations. Return shipments should comply with all federal, state, and DOT regulations. All residual caustic soda should be removed from containers prior to disposal.

More information on the hazards and handling of caustic soda appear in the MCA Chemical Safety Data Sheet SD-9 and Diamond Shamrock Corporation's Caustic Soda Handbook EC-DC-1b.

PREPARED BY DIAMOND SHAMROCK CORPORATION
Technical Service Group

DATE October 10, 1978